

# Characterising the *suffulta* mutation in tomato

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## Background

Plastids play vital roles in the growth and development of plant cell, from photosynthesis to synthesis of amino acids, hormones and fatty acids, as well as nitrogen assimilation. The *suffulta* mutant of tomato has significant plastid phenotype with giant chloroplasts resulted from abnormal plastid division in leaf mesophyll cells. There have been some evidences suggesting that the *SUFFULTA* gene could be homologous to *ARC6* from *Arabidopsis*, which functions in plastid division. Previous work has been done in mapping *SUFFULTA* gene and monitoring the expression of the gene's product.

## Materials and methods

The main aim of this project is to transform the tomato *suffulta* mutant with *ARC6* gene from *Arabidopsis* to investigate if *SUFFULTA* is indeed the homolog of *ARC6* in tomato. The complementary transformation is done in the seedlings of *suffulta* mutants of three alleles, namely *su-1*, *-2* and *-3*, using *Agrobacterium* mediated method and MicroTom procedure. *ARC6* gene is cloned from genomic DNA of *Arabidopsis* together with its promoter to be used in the binary vector for transformation.

## Outcomes

As the nature of *suffulta* mutant is largely unknown, the present study can help to characterise the candidate gene for this mutation and thus can shed some light into the molecular mechanism of plastid division in tomato.

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